

IN THE CLAIMS:

1. – 13. Canceled.

14. (Currently Amended) A process for producing a tubular composite structure having at least one integrally reinforced section for use as the sidewall for a portion of a space launch vehicle,
5 said process comprising the steps of:

first applying a first face sheet onto the an outside surface of a mandrel having a longitudinal axis;

10 covering the an outside surface of said first face sheet with a core layer having at least a first thickness at a first position relative to said longitudinal axis and a second thickness, different than said first thickness, at a second position relative to said longitudinal axis; in at least a first and second position along the length of said mandrel;

second applying a second face sheet to the an outside surface of said core layer, wherein the combined thickness of said first face sheet, said core, and said second face sheet define a composite
15 structure having the same thickness at said first position as at said second position; in said first and second positions is equal;

curing said composite structure; and

removing said mandrel.

20 15. (Currently Amended) The process of Claim 14, wherein at least one of said first and second applying steps further comprises applying a face sheet having a first thickness in at said first position and having a second thickness in at said second position, wherein said first thickness and said second thickness are different.

25 16. (Currently Amended) The process of Claim ~~15~~ 14, wherein at least one of said first and second applying steps further comprises applying a plurality of fiber reinforced material layers.

17. (Currently Amended) The process of Claim 16, wherein ~~at least one of said first and second applying steps further comprises applying~~ said plurality of fiber reinforced material layers
30 comprises applying a first plurality number of said fiber reinforced material layers in said first

position and applying a second ~~plurality~~ number of said reinforced fiber material layers in said second position, wherein said first and second ~~pluralities~~ numbers are different.

18. (Currently Amended) The process of Claim 17, wherein said first thickness of said
5 core is greater than said second thickness of said core and said first number is less than said second
number, said step of applying said first and second plurality of fiber reinforced material layers further
comprises one of increasing and decreasing said plurality of reinforced fiber material layer in an
inverse relationship with changes in thickness of said core.

10 19. (Currently Amended) The process of Claim ~~18~~ 16, wherein ~~increasing and decreasing~~
at least a portion of said plurality of fiber reinforced material layers are partial layer disposed
adjacent to said core, further comprises one of adding and subtracting fiber reinforced material layers
from the inside surfaces of at least one of said first and second faces sheets.

15 20. (Currently Amended) The process of Claim 14, wherein said covering step further
comprises utilizing a core having one planar surface, having at least a first position along the length
of the mandrel with a reduced thickness in comparison with at least a second position along the
length of said mandrel.

20 21. (Currently Amended) The process of Claim ~~20~~ 14, wherein said applying steps further
comprises applying at least one face sheet ~~having an increased thickness in said first position, such~~
that said composite structure maintains a constant thickness along its length, the combined thickness
of said first face sheet, said core, and said second face sheet in said first and second positions is
equal.

25 22. (Currently Amended) The process of Claim ~~20~~ 14, wherein said covering step further
comprises utilizing a core having an increased density at said first position wherein said first
thickness is less than said second thickness.

30 23. (Original) The process of Claim 14, wherein said first and second applying steps
comprise at least one of hand lay-up, filament winding, and fiber placement.

24. (Original) The process of Claim 23, wherein pre-impregnated fiber reinforced materials are utilized.

5 25. - 41. Canceled.